Best Management Practices

MISSOURI DEPARTMENT OF CONSERVATION

Curtis pearlymussel

Epioblasma florentina curtisi

Common name • Curtis pearlymussel
Scientific name • *Epioblasma florentina curtisi*
Federal status • Endangered
State status • Endangered

Ecology

The Curtis pearlymussel is typically found in small creeks and shallow, flowing rivers that have stable substrates. It is generally found buried in clean, silt-free substrates of sand and gravel to gravel, cobble, and boulder in riffles and runs that are transitional areas between headwaters and lowlands.

Mussels are filter feeders that pump water through their siphons to collect food particles from the water. They gather necessary nutrients and remove unwanted toxins from the water through this process. Almost all mussel species depend on a fish host to complete their life cycle. Mature adult mussels release glochidia (the immature stage), which must attach to the gills or fins of fish to complete their development. After an average of 2-4 weeks, the newly metamorphosed juveniles drop from the fish and if they land in suitable habitat, they will burrow into the substrate and grow to repeat the cycle. Fish are an important link in the reproductive cycle of mussels and, typically, only certain species of fish are suitable hosts. The rainbow darter appears to be the host for Curtis pearlymussel. The Curtis pearlymussel spawns in August and September and releases glochidia from March to May.

Reasons for Decline

Although it has never been common or widespread, the range of the Curtis pearlymussel has been declining in Missouri since the early 1900s. Alteration and degradation of habitat as a result of rural and urban development has very likely adversely impacted this species. Practices such as gravel mining, removal of trees and undergrowth along the streambank, and non-point source pollution from agriculture and urban areas have likely contributed to the decline of this species in Missouri. These practices have reduced available habitat, increased stagnation of bottom waters, increased siltation, and possibly eliminated or reduced numbers of fish hosts.

Specific Recommendations

The Curtis pearlymussel is limited primarily by habitat. It requires shallow (2-30 inches) flowing riffles and runs, and unpolluted, silt-free water.
→ A survey of the waterways in the project area must be conducted by a trained biologist in order to identify occurring populations of this species.
→ Dams and other water impoundment structures that alter substrate composition or water depth should be avoided in creeks and rivers that contain possible habitat for the Curtis pearlymussel.
→ No work should be allowed below the high bank of the stream between March 1 and May 31 to allow for successful reproduction and recruitment.
→ All equipment that enters the waterway should be washed and checked for juvenile zebra mussels before entering another body of water. This will help prevent the spread of this exotic European mussel species that can negatively affect native aquatic organisms and mussel species like the Curtis pearlymussel.

General Recommendations

Refer to Management Recommendations for Construction Projects Affecting Missouri Streams and Rivers.

Information Contacts

Missouri Department of Conservation
Policy Coordination Section
P.O. Box 180
2901 W. Truman Blvd
Jefferson City, MO 65102-0180
Telephone: 573/751-4115

Missouri Department of Natural Resources
Division of Environmental Quality
P.O. Box 176
Jefferson City, MO 65102-0176
Telephone: 573/526-3315

U.S. Army Corps of Engineers
Regulatory Branch
700 Federal Building
Kansas City, MO 64106-2896
Telephone: 816/983-3990

U.S. Environmental Protection Agency
Water, Wetlands, and Pesticides Division
901 North 5th Street
Kansas City, KS 66101
Telephone: 913/551-7307

U.S. Fish and Wildlife Service
Ecological Services Field Office
608 E. Cherry Street, Room 200
Columbia, MO 65201
Telephone: 573/876-1911

Disclaimer

These Best Management Practices were prepared by the Missouri Department of Conservation with assistance from other state agencies, contractors, and others to provide guidance to those people who wish to voluntarily act to protect wildlife and habitat. Compliance with Best Management Practices is not required by the Missouri wildlife and forestry law nor by any regulation of the Missouri Conservation Commission. Other federal, state or local laws may affect construction practices.

3/2000